

**LISTING OF CLAIMS:**

Please consider the claims as follows:

1        1. (currently amended) Apparatus adapted for use in transmission in an  
2 optical communication system, comprising:

3              a modulator, for modulating an optical phase of pulses within a sequence of  
4 return-to-zero (RZ) pulses in accordance with an input digital data stream to form an  
5 optical phase modulated signal, said modulator being one of phase shift keying (PSK),  
6 differential phase shift keying (DPSK) or quadrature phase shift keying (QPSK)  
7 modulator; and

8              a means for applying the optical phase modulated signal to a dispersion managed  
9 optical transmission medium;

10             wherein dispersion management is provided by quasi-linear transmission of pulses  
11             with a very short duration compared to a bit period, and said pulses disperse very quickly  
12             as they propagate along said transmission medium.

2. (canceled)

3. (canceled)

1        4. (previously presented) The invention defined in claim 1 wherein said  
2 modulator is a phase shift keying (PSK) modulator.

1        5. (previously presented) The invention defined in claim 1 wherein said  
2 modulator is a differential phase shift keying (DPSK) modulator.

1        6. (previously presented) The invention defined in claim 1 wherein said  
2 modulator is a quadrature phase shift keying (QPSK) modulator.

1           7. (previously presented) The invention defined in claim 1 wherein said  
2 medium is a long haul transmission medium adapted for transmitting solitons.

8. (canceled)

1           9. (previously presented) The invention defined in claim 1 wherein said  
2 apparatus further includes a wavelength division multiplexer adapted to combine an  
3 output signal of said modulator with other optical phase modulated signals having optical  
4 carriers with different wavelengths.

1           10. (previously presented) The invention defined in claim 1 wherein said  
2 modulator is a LiNbO<sub>3</sub> phase modulator.

1           11. (previously presented) The invention defined in claim 1 wherein said  
2 modulator is a LiNbO<sub>3</sub> Mach-Zehnder phase modulator.

1           12. (previously presented) The invention defined in claim 1 wherein said  
2 apparatus further comprises a receiver including a delay demodulator for receiving the  
3 optical phase modulated signal from the dispersion managed optical transmission  
4 medium.

1           13. (previously presented) The invention defined in claim 1 wherein said  
2 apparatus further comprises a receiver including a balanced receiver for recovering said  
3 input data from the phase modulated signal.

14. (canceled)

1           15. (previously presented) The invention defined in claim 1 wherein said  
2 transmission medium includes discrete or distributed means of erbium-doped fiber  
3 amplification (EDFA) or Raman amplification.

1        16. (previously presented) A method of transmission in an optical  
2        communications, comprising the steps of:

3              modulating an optical carrier signal in a sequence of return-to-zero (RZ) pulses;  
4              modulating an optical phase of said pulses in accordance with an input digital data  
5        stream to form an optical phase modulated signal via one of phase shift keying (PSK),  
6        differential phase shift keying (DPSK) or quadrature phase shift keying (QPSK); and

7              applying said optical phase modulated signal to a dispersion managed optical  
8        transmission medium;

9              wherein dispersion management is provided by quasi-linear transmission of pulses  
10          with a very short duration compared to a bit period, and said pulses disperse very quickly  
11          as they propagate along said transmission medium.

17-18. (canceled)

1        19. (new) The apparatus of claim 1, wherein each of the pulses has a duty  
2        cycle of 33%.

1        20. (new) The method of claim 16, wherein each of the pulses has a duty cycle  
2        of 33%.